United States Court of Appeals

for the Second Circuit

APPELLANT'S BRIEF

ORIGINAL

74-1496

In The

United States Court of Appeals

For The Second Circuit

KOPPERS COMPANY, INC., and UNIVERSAL CORRUGATED BOX MACHINERY CORPORATION,

Plaintiffs-Appellees,

vs.

S & S CORRUGATED PAPER MACHINERY CO., INC.,

Defendant-Appellant.

BRIEF FOR DEFENDANT-APPELLANT

OSTROLENK, FABER, GERB & SOFFEN
Attorneys for Defendant-Appellant
260 Madison Avenue
New York, New York 10016
(212) 685-8470

JEROME M. BERLINER
ROBERT C. FABER
On the Brief

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PUBLICATION

UNITED STATES COURT OF APPEALS FOR THE SECOND CIRCUIT

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v.	:	Docket No. 74-1496
KOPPERS COMPANY, INC. and UNIVERSAL CORRUGATED BOX MACHINERY CORPORATION, Appellees.	:	

DEFENDANT-APPELLANT'S BRIEF

I. PRELIMINARY STATEMENT

This is an appeal from the Judgment Order by Judge Mark A. Costantino dated February 19, 1974 and entered by the United States District Court for the Eastern District of New York. The Opinion below is reported at 367 F. Supp. 55 (609a)*, 180 USPQ 639.

II. ISSUES PRESENTED FOR REVIEW

1. Are not the findings of fact in the Opinion below (609a) insufficient to determine the factual basis for the holding of patent invalidity?

2. Where the undisputed evidence shows that the invention of Shields Patent No. 2,988,236 (PX-1, E1) in suit is not disclosed by a single prior art reference, did not the District Court err in failing to make all those inquiries mandated by the Supreme Court for testing to determine non-obvious subject matter as provided in Title 35 U.S.C., Section 103?

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*The suffix "a" denotes pages of Appendix Volumes I and II, and the prefix "E" denotes pages of Appendix Exhibit Volumes.

3. Where the Patent Office file history (PX-19, E18) shows that the only amendments to Claim 1 of the Shields patent (PX-1, E1) in suit were made in response to mere formal objections and not to overcome the prior art, did not the District Court err in its manner of applying the doctrine of file wrapper estoppel to the issue of patent validity?

4. On the issue of patent validity, did not the District Court err by failing to compare each limitation recited in Claim 1 of the Shields suit patent (PX-1, E1) with the teachings of the prior art?

5. Where Claim 1 of the suit patent (PX-1, E1) recites a plurality of mechanical elements and their cooperating relationship, did not the District Court err by limiting the scope of the invention to only one of these elements, namely the pusher element?

6. Is not Claim 1 of the Shields patent in suit (PX-1, E1) valid as defining non-obvious subject matter as set out in Title 35 U.S.C., Sec. 103 in that the subject matter of Claim 1 as a whole would not have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains?

7. Are not the findings of fact in the Opinion below (609a) insufficient to determine the factual basis for the holding of non-infringement?

8. Where the file wrapper (PX-19, E18) shows that the only amendments to Claim 1 of the Shields patent in suit (PX-1, E1) were made in response to mere formal objections and not to overcome

the prior art, did not the District Court err in its manner of applying the doctrine of file wrapper estoppel to the issue of patent infringement?

9. On the issue of patent infringement, did not the District Court err by failing to compare each limitation recited in Claim 1 of the Shields suit patent (PX-1, E1) with the mechanical elements of each accused device (PX-3, 5, 12)?

10. Is not Claim 1 of the Shields patent in suit (PX-1, E1) infringed by the devices illustrated in each of the plaintiff's Trial Exhibits Nos. 3, 5 and 12?

III. STATEMENT OF THE CASE

A. Nature of the Action and Proceedings

This is an appeal in an action for patent infringement taken by defendant below from the Judgment Order (606a) dated February 19, 1974, entered by the District Court, Eastern District of New York. The Order holds Claim 1 of U.S. Patent No. 2,988,236 (PX-1, E1) "invalid under 35 U.S.C. Sec. 103 for obviousness" and also holds that neither of the plaintiffs "has infringed defendant's United States Patent No. 2,988,236".

In the Complaint (5a) the Plaintiffs-Appellees, Koppers Co., Inc., and Universal Corrugated Box Machinery Corp. (hereinafter collectively "KOPPERS") request a Declaratory Judgment holding that U.S. Patent No. 2,988,236 (PX-1, E1) owned by the Defendant-Appellant, S&S Corrugated Paper Machinery Co., Inc. (hereinafter "S&S") and issued to A.F. Shields on June 13, 1961, for a Blank Stacking, Straightening and Delivery Device, is invalid and not infringed by KOPPERS. In its Answer (14a) S&S denies the essential

allegations of the Complaint (5a) and asserts a Counterclaim (15a) that charges KOPPERS with infringing the Shields patent (PX-1, E1). Plaintiffs' Reply to Defendant's Counterclaim (18a) denies the essential allegations of the Counterclaim (15a). By agreement, the only issues to be tried were the validity, infringement and enforceability of Claim 1 of the suit patent (22a).

After receiving evidence during an often interrupted five-day trial and upon briefs on behalf of the parties, the trial Court (Costantino, J.) announced its decision in an Opinion dated November 28, 1973 (609a). The Judgment Order dated February 19, 1974 (606a) holds Claim 1 of the Shields patent (PX-1, E1) invalid and not infringed by "plaintiffs' Universal Understackers", and also enjoins S&S from asserting the suit patent in any manner against KOPPERS or its customers. This appeal was filed timely, March 19, 1974, by S&S (4a).

B. The Parties

S&S, the owner of the Shields U.S. Patent No. 2,988,236 (PX-1, E1) in suit is located in Brooklyn, New York, and is engaged solely in the manufacture of machinery for the corrugated container industry (355a).

KOPPERS consists of Koppers Company, Inc., a large conglomerate public corporation (455a), and Universal Corrugated Box Machinery Corporation, which is owned entirely by Koppers Company, Inc. (DX-P, p. 5). KOPPERS is engaged in the business of manufacturing machines for producing corrugated boxes. Among these machines are underfeed stacker-straighteners that operate with box making folder-gluers. Three versions of the KOPPERS underfeed

stacker-straighteners (PX-3, 5 and 12) are complained of as infringements of the Shields patent Claim 1 (PX-1, E4).

C. The Suit Patent and Background of the Invention

1. Brief Description of Patented Machine

The Shields Patent 2,988,236 in suit (PX-1, E1) is directed to a stacker-straightener device that has particular utility in conjunction with a folder-gluer. The latter produces collapsed boxes by inwardly folding the outer panels of a flat box blank and utilizing a glue joint to hold the outer panels in folded condition. The glue at the glue joints of the boxes issuing from the folder-gluer has not yet set but is tacky to hold the glue joints closed. The steps in manufacturing a glued box from a slotted and scored blank are illustrated in chart No. 1 of DX-T (E134).

Referring in particular to the "Simplified Description of Patented Stacker-Straightener" found on Chart No. 3 of DX-T (E136), it is seen that folded but not assembled and therefore tubular shaped boxes 30 issuing from the folder-gluer, moving from left to right, enter the stacker-straightener on input conveyor 35 and are formed into an underfed stack 32 that rises between plates 57 and 20. The trailing edge plate 20 reciprocates horizontally and in so doing slaps the trailing edges of the boxes in stack 32 to straighten or to align folded panels that may have been misaligned during the folding operation in the folder-gluer. The weight of the stack prevents the glue joints from opening and maintains sufficient pressure for complete gluing of the boxes (PX-1, col. 1, lines 60-62) (E3). Periodically, pusher

plate 92 pushes a pile of boxes from the top of stack 32. In order to prevent interference with infeeding of boxes to the underfed stack, pusher plate 92 is mounted for limited upward movement with respect to support 90. Pusher 92 is maintained generally vertical while it is in contact with stack 32 and pushing the top portion thereof.

2. Problems Encountered in Manufacturing Corrugated Boxes

The joint gap between the folded panels of a carton (see "GAP" notation on DX-J) is a measure of folded panel alignment. At trial, Edgar Lehman, a graduate engineer employed by S&S for more than twenty-three years and now its vice-president for sales, testified as to the importance of maintaining the joint gap within relatively close tolerance to control the girth of the erected carton (373a-377a). If box girth is too large, the material within the box may slide and break during shipment, and if box girth is too small, it will be difficult or impossible to fill the box automatically, resulting in serious downtime in the filling plant. Box customers will complain if as few as four or five defective boxes are found in a shipment of ten thousand boxes (379a). One factor making it difficult to maintain gap width within tolerances are inconsistencies, such as moisture content variations, at different regions of a piece of corrugated board [compare relatively flat corrugated board of DX-M with the warped board of DX-N (378a-381a)].

3. The State of the Art Just Prior to the Shields Invention

The only prior art of record in this suit that shows stacking, straightening and delivery apparatus for folded boxes

received from a folder-gluer while the glue joints of the boxes are still tacky is U.S. Patent No. 2,637,251 issued to S. J. Spiess, May 5, 1953, on an application filed October 26, 1950 (PX-2, Tab 16). In the Spiess machine, boxes are top-fed from the folder-gluer to a very long so-called "shingling conveyor" extending at right angles to the folder-gluer. After the panels of boxes on the shingling conveyor are straightened, the boxes are held on this conveyor until the glue joints set. It is only after the glue joints are set that the boxes are delivered by the shingling conveyor to a stacking station. Prior to the Shields invention, this right-angle type machine was used by the Kieckeffer Company, a large box manufacturer (403a-405a). KOPPERS' advertisement (DX-B, E127) illustrates a right-angle machine including a top-fed counting section at the out-feed end of the shingling conveyor section (401a).

Corrugated board is a springy material so that folded panels tend to open. This condition is accentuated with folded short panels and with folded warped board. As a result, the right-angle machine is susceptible to jamming because there is no control over the box in the transfer region where the right-angle machine receives the boxes from the folder-gluer. The tacky unset glue joints may open, permitting the folded panels of one box to pop upward and block entry of the following box onto the shingling conveyor (397a-400a, 504-5a).

The right-angle stacker-straightener requires at least four times the floor area required by the underfeed stacker-straightener

of the Shields device in the suit patent (PX-1, E1)(401-2a), the zig-zag configuration of the right-angle machine impedes material flow in the box plant (402a), and the right-angle machine often requires an extra operator (456a).

4. The Patented Machine Represents a Radical Departure from the Prior Art

Prior to the invention of the Shields underfeed stacker-straightener, the corrugated box industry was headed in the direction of using a right-angle delivery or shingle-type takeoff from a folder-gluer (406a). The Shields concept of straightening box panels in a rising underfed stack of glued boxes has been fully accepted in the industry (424-5a). Underfeed stacker devices allow better productivity than right-angle devices for the reasons set forth in the preceding section of this Brief and because right-angle delivery devices cannot run certain types of warp (398a).

That the underfeed stacker-straightener is a radical departure in both concept and construction from the right-angle delivery of the prior art (DX-B, E127) is seen in the following broad significant areas.

(1) The right-angle delivery has a shingling conveyor that is top-fed by the folder-gluer; whereas the patented machine receives boxes directly and in-line from the folder-gluer at the bottom of the stack.

(2) In the right-angle delivery, straightening or aligning of the panels takes place while the boxes are moving on a

horizontal conveyor in shingled fashion; whereas in the patented machine, panel aligning takes place as the boxes are rising in an underfeed stack.

(3) In the right-angle delivery, setting of the glue joints takes place while the boxes are moving on a horizontal conveyor in shingled fashion and a separate floating belt 162 (col. 6, line 6 of Tab 16, PX-2) must be provided to maintain proper pressure for completing adhesion at the glue joints; whereas in the patented machine setting of the glue joints takes place as the boxes are rising in the underfed stack and there is "sufficient pressure maintained within the stack to allow for complete gluing" (PX-1, col. 1, lines 60-61) (E3).

(4) In the right-angle delivery, piles of boxes are delivered by a separate stacking device (141-5a) that is top-fed by the shingling conveyor and pushes out the entire stack; whereas in the patented machine, piles of finished boxes are removed directly from the top of the underfed stack.

5. The Patented Invention Defined by Claim 1 of the Suit Patent

Chart No. 4 of DX-T (E137) graphically illustrates the relationship between the elements of Claim 1 of the suit patent (PX-1, E1) and the apparatus of the patented invention. Chart No. 4 was prepared by Defendant's expert Cantor, and his testimony at trial of this Action amplified the contents of this Chart No. 4 (501-11a).

Claim 1, broken into nine mechanical elements as in Chart No. 4, reads:

"A stacking, straightening and delivery mechanism adapted for use with a machine for operating on box blanks, comprising,

(1) a conveyor operable in synchronism with the said machine to move said blanks in a first, or longitudinal direction,

(2) a device above the conveyor to intercept and accumulate blanks issuing from the machine thereby forming a blank stack being fed from below,

(3) said device including a pair of plates transverse to the direction of motion of the blanks between which the blanks may be accumulated,

(4) one of the said plates abutting the trailing edge of the blanks in the stack and being periodically reciprocally movable in a longitudinal direction to apply a straightening force to the blanks;

(5) an opening under said plate sufficient to permit the entry of at least one blank at a time,

(6) and above the upper end of said plates, a longitudinally movable plate for periodically pushing a top portion of the stack of said blanks from the said accumulating device

(7) and means for supporting the said pusher plate so that it remains in a substantially vertical position when in contact with the said blank stack,

(8) said pusher plate being mounted for limited vertical movement relative to the means for supporting the pusher plate,

(9) said stack being fed with blanks as the movable plate is removing said top portion from the stack."

Relating the claim elements to Figure 1 of the suit patent (PX-1, E1), it is seen that:

Element 1 - Conveyor belt 35 receives folded boxes from a folder-gluer (not shown) and moves them longitudinally, or from left to right.

Element 2 - These boxes are accumulated in underfed stack 32 located above conveyor 35.

Element 3 - Stack 32 is also located between accumulating device plates 20, 57 that extend transverse to the longitudinal direction of box motion.

Element 4 - Trailing edge engaging plate 20 oscillates to apply a slapping force which straightens misaligned box panels of boxes as they are rising in stack 32.

Element 5 - Opening 31 below slapper plate 20 permits boxes to enter the bottom of stack 32.

Element 6 _ Pusher 92 moves from left to right during spaced intervals of time to push a pile of boxes at the top of stack 32.

Element 7 - Pusher 92, when moving the top of stack 32, is maintained in a vertical position by support 90 which is connected to conveyor chains 86, 87.

Element 8 - Pusher 92 is mounted to slide upward with respect to plate 90, as well as with respect to chains 86, 87.

Element 9 - Operation of pusher 92 when pushing the top of stack 32 does not interfere with continued feeding of boxes through space 31 into the bottom of stack 32.

D. All Elements of Claim 1 are Found in Each Accused Device

The question of infringement of Claim 1 is to be considered in connection with three of KOPPERS' underfeed stacker-straighteners shown in PX-3, 5 and 12 (E136, E138 and E11). All

three of these machines receive boxes from a folder-gluer before the glue joints have set and form the boxes into an underfed stack that travels upward between a pair of plates, one of which slaps the trailing edges of the boxes as they rise in the stack. This slapping aligns the folded panels that may have become misaligned during the folding process. Periodically, a pusher plate engages the top portion of the stack to remove a pile of boxes therefrom. For purposes of this case, the only differences between the three accused machines relate to the different mountings of the pusher plates.

In KOPPERS' original underfeed stacker-straightener of PX-3 (E 136) sold early in 1969 (DX-P, pp. 55-6), the pusher plate is mounted on a vertical support plate, and the latter is secured to and moves with a horizontal rod that is longitudinally movable by a stationary pusher cylinder. The pusher plate is slidably mounted to the support plate so as to be vertically movable with respect thereto. This slidable mounting of KOPPERS' pusher plate on the support plate bears a strong resemblance to the pusher plate mounting illustrated in the suit patent (PX-1, E1) and is for all intents and purpose the same as the slidable mounting of pusher plate 92 of the suit patent (PX-1, E1) to its support 90.

After S&S became aware of KOPPERS' original underfeed stacker-straightener, KOPPERS modified the mounting of the pusher plate in PX-3 (E144) so that it was at the end of a horizontal rod that is longitudinally movable by a pusher cylinder (PX-5, E146).

The cylinder end opposite the pusher plate is mounted to a pivot extending transverse to the cylinder axis. Prior to movement of the pusher plate in the horizontal delivery stroke, the latter is maintained in a vertical position by stationary support surfaces on the machine frame that are engaged by projections that extend radially from the pusher cylinder (520-2a)(DX-S, E143). During the pushoff stroke, the weight of the pusher plate and other elements secured thereto usually maintains the projections in contact with these support surfaces. However, the pusher plate is mounted for limited vertical movement, in that the projections are not restrained against moving upwardly away from the support surfaces. At Monroe and Union the witness Cantor, using his fingers, actually lifted the pusher (517a). In fact, at the conclusion of the pusher cylinder working stroke, a lifting cylinder is actuated to move the pusher plate upward for its return stroke. Chart No. 8 of DX-T (E141) graphically illustrates that the operations and functions of KOPPERS' lift cylinder pusher and the pusher of the suit patent PX-1 (E1) are the same.

Subsequent to commencement of this law suit, KOPPERS replaced the lift cylinder by a mechanical lifting device including a pivoted ramp (PX-12, E11). This mechanical lift version includes virtually the same pusher cylinder mounting as the lift cylinder version of PX-5 (E146). The mechanical lift comes into play as the pusher plate moves in its return stroke. Cantor, using his fingers, actually lifted the pusher at Bellmar (517a) where the mechanical lift is installed (496a). Testimony by Cantor (527-9a) explains how the pusher plate of PX-13 (E11) is

mounted for vertical movement and how the pusher plate moves upward during its return stroke. It is interesting to note that the upper plate of the "mechanical lift" is relieved so that there is room for the roller to rise if it has to (527a) and the pivoted ramp may swing above the horizontal (529a).

That each of the three versions of plaintiffs' understacker (PX-3, 5 and 12) (E136, E138 and E11) falls within the scope of the Shields patent in suit (PX-1, E1) is seen by reference to Charts 5, 6 and 7 of DX-T (E138-E140), and related testimony appearing on the record at 513-22a as to the lift cylinder version of PX-5 (E138), at 524-7a as to the sliding plate version of PX-3 (E136), and at 527-9a as to the mechanical lift version of PX-12 (E11).

IV. ARGUMENT

A. Patent Validity

1. Errors by the Court Below in Relation to Patent Validity

In the portion of the Opinion at 611a concerning patent

validity, the Court below appears to recognize that the validity of Claim 1 is to be tested in accordance with the mandate of the Supreme Court in Graham v. John Deere Co., 383 U.S. 1 (1966) concerning factual inquiries that District Courts must make to determine "obviousness" under 35 U.S.C., Sec. 103. The statute reads:

> "Sec. 103. Conditions for patentability; non-obvious subject matter
>
> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made."

Graham, supra, requires that:

> "Under Sec. 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined".

The importance of these three factual inquiries was noted by the Supreme Court in Blonder-Tongue Laboratories, Inc. v. University of Illinois Foundation, 402 U.S. 313, 333 (1971) and has been

recognized in this Second Circuit. Ritter v. Rohm & Haas Co., 271 F. Supp. 313, 332 (S.D.N.Y. 1967). Detailed review of these three matters by the Court is required. Formal Fashions, Inc. v. Braiman Bows, Inc., 369 F.2d 536 (2 Cir. 1966); Deep Welding, Inc. v. Sciaky Bros., Inc., 417 F.2d 1227, 1233 (7 Cir. 1969); Trio Process Corp. v. L. Goldstein's Sons, Inc., 461 F.2d 66, 71 (3 Cir. 1972); cert. den., 409 U.S. 997 (1973). The manner in which the Court below failed to make the review and tests that are required by Graham, as well as any actual Graham findings, is detailed below. But, before considering these deficiencies, it is helpful to understand how the Court below tested the invention and what was actually assessed in his incorrect test.

Because of his misconception of the doctrine of file wrapper estoppel, the Court below was sidetracked and failed to apply the Graham tests. The Court below was required by Graham to view and test the patent (i.e. the single claim in issue) as a whole (including all limitations). Graham v. John Deere Co., 383 U.S. 1, 32 (1966); Eimco Corp. v. Peterson Filters & Eng. Co., 406 F.2d 431, 434-35 (10 Cir. 1968). Instead, although it was dealing with a claim reciting many different mechanical elements in combination, the Court below wrongfully concludes that:

> "prior art references *** preclude the defendant from claiming a combination patent" (612a)

This erroneous conclusion is repeated and expanded:

> "In light of the above history it is clear that the defendant should be precluded from

> asserting a combination patent. Rather the scope of the invention should be limited to the pusher element" (614a) (Emphasis Added)

and in the same vein:

> "Referring to the rejected versions of Claim One and that which was allowed, it is clear that the subject matter of the patent had been reduced to include only the pusher element" (614a) (Emphasis Added).

But a single pusher element does not equal applicant's entire combination mechanism. "The inventor created an integer." The element must be viewed in its combination. See American Tech. Mach. Corp. v. Caparotta, 229 F. Supp. 479, 483 (E.D.N.Y. 1969); modified on other grounds, 339 F.2d 557 (2 Cir. 1964); cert. den., 382 U.S. 842 (1965).

In order to readily compare allowed Claim 1 with Claim 1 as filed, the claim is reproduced below with all portions added by amendment being underlined and with the sole deleted word "oscillatorally" in line 14 being indicated.

> A stacking, straightening and delivery mechanism adapted for use with a machine for operating on box blanks, comprising, a conveyor operable in synchronism with the said machine to move said blanks in a first, or longitudinal, direction, a device above the conveyor to intercept and accumulate blanks issuing from the machine thereby forming a blank stack being fed from below, said device including a pair of plates transverse to the direction of motion of the blanks between which the blanks may be accumulated; one of the said plates abutting the trailing edge of the blanks in the stack and being periodically ~~oscillatorally~~ reciprocally movable in a longitudinal direction to apply a straightening force to the blanks; an opening under said plate sufficient to permit the entry of at least one blank at a time, and above the upper end of said plates, a longitudinally

movable plate for periodically pushing a top portion of the stack of said blanks from the said accumulating device and means for supporting the said pusher plate so that it remains in a substantially vertical position when in contact with the said blank stack, said pusher plate being mounted for limited vertical movement relative to the means for supporting the pusher plate, said stack being fed with blanks as the movable plate is removing said top portion from the stack.

In Paper No. 3 (E36), the first Office Action, Claim 1 was rejected by the Patent Office Examiner on mere formal grounds for being "indefinite". Responsive to Paper No. 3, the underlined portion in lines 5 and 6 of Claim 1 was added by the applicant (E40).

In Paper No. 6 (E46), the second Office Action, Claim 1 was rejected for being "unpatentable over Greenwood in view of Binkard or Taylor and Hess or Chandler" (E47). Applicant made no amendment in response to this rejection. Applicant only asserted reasons for the nonobviousness of the Claim 1 combination and arguments as to the incorrectness of the rejection (E52-3).

Apparently, applicant convinced the Examiner that the rejection of Claim 1 in Paper No. 6 (E46) was improper, because he withdrew that rejection in favor of a different rejection based upon prior art. In Paper No. 9 (E58), the third Office Action, Claim 1 was rejected for being "unpatentable over Greenwood in view of Link et al. and Hart." Just as with the previous Office Action, applicant made no amendment to Claim 1 to overcome the later prior art rejection. Again, only arguments asserting the nonobviousness of the invention were offered (E64-6).

Applicant's reasoning appears to have been persuasive to the Examiner, since in the fourth Office Action, Paper No. 11 (E68), the Examiner discontinued his assertion of any prior art against Claim 1 and instead merely issued a rejection based solely on form, alleging that Claim 1 was "indefinite". Responding to Paper No. 11, the applicant made the remaining amendments to Claim 1 (E69-70).

Thus, not even a single one of the amendments to Claim 1 was made by the applicant to avoid the prior art. Every rejection based upon prior art was withdrawn by the Examiner because he was persuaded by applicant's reasoning that the substance of Claim 1, essentially as it was originally filed, was nonobvious when viewed in light of the prior art. Each of the amendments made to Claim 1 was to satisfy the Examiner as to form and did not bear on substantive matters concerned with overcoming prior art.

The Court below has asserted that S&S is estopped from asserting that any element of its unitary combination other than the pusher is patentable, or that the entire combination itself is patentable because the applicant had made amendments to the claim that made the recitations as to the pusher element of the combination more definite and understandable. The Court below relied upon the doctrine of "file wrapper estoppel", i.e. what you surrender in the Patent Office cannot be recaptured in an infringement action. Nelson Planning Ltd. v. Tex-O-Graph Corp., 280 F. Supp. 226, 229 (S.D.N.Y. 1968); affd., 423 F.2d 36

(2 Cir. 1970). But, file wrapper estoppel only applies to claim amendments made to avoid prior art. Trio Proc. Corp. v. L. Goldstein's Sons, Inc., 461 F.2d 66, 75 (3 Cir. 1972); cert. den., 175 USPQ 577 (1973); Reeves Bros., Inc. v. U.S. Laminating Corp., 282 F. Supp. 118, 133 (E.D.N.Y. 1968); affd., 417 F.2d 869 (2 Cir. 1969); David & David, Inc. v. Myerson, 277 F. Supp. 973, 977 (E.D.N.Y. 1966). In the present case, the claim amendments were only made to correct formal matters, and in correcting the claims, no area of patent protection was given up. Hence, file wrapper estoppel is not applicable to the present case. Hubbell v. United States, 179 U.S. 77, 80 (1900); Trio Proc. Corp. v. L. Goldstein's Sons, Inc., supra; Dart Ind. Inc. v. E.I. duPont de Nemours & Co., 348 F. Supp. 1338, 1343-44 (N.D. Ill. 1972); rev'd. on other grounds, 179 USPQ 392 (7 Cir. 1973).

"The basic principle underlying file wrapper estoppel is that a party cannot take inconsistent positions concerning the same subject matter in different transactions." Kaiser Ind. Corp. v. Mc Louth Steel Corp., 400 F.2d 36, 52 (6 Cir. 1968); cert. den., 393 U.S. 1119 (1969). A party giving up claim protection in view of prior art would be inconsistent when he tried to recover that protection in an infringement action. But a party, as S&S here, who makes changes to clarify his language and meaning, cannot be inconsistent when he asserts language he never gave up, just clarified.

Considering each change made in the S&S patent Claim 1, the following is seen:

(1) Added: "to move said blanks in a first, or longitudinal direction", which merely relates the direction of movement imparted to the conveyor to the direction of movement of the reciprocating slapper plate that applies the straightening force and the take-off pusher plate.

(2) Added: "thereby forming a blank stack being fed from below", which merely describes the function of the "device above the conveyor".

(3) Changed: "oscillatorally" to reciprocally", a change of terminology suggested by the Examiner as more accurately describing motion of the slapper plate.

(4) Added: "to apply a straightening force to the blank", which merely describes the function of the slapper plate.

(5) Added: "top portion of the", which merely indicates the portion of the stack being moved by the pusher plate.

(6) Added: "said pusher plate being mounted for limited vertical movement relative to

the means for supporting the pusher plate", which merely indicates that the mounting of the pusher plate to its supporting means permits limited movement therebetween.

(8) Added: "said stack being fed with blank as the movable plate is moving said top portion from the stack", which is a functional statement to indicate that it is not necessary to stop infeeding to the bottom of the stack during takeoff from the top of the stack.

There was certainly nothing in the file history of Claim 1 to suggest that applicant's amendments for formal reasons to the description of the pusher meant that applicant could allege the novelty of only the pusher. The pusher description was amended because only it needed amendment. The pusher was the feature discussed in applicant's arguments to the Examiner because it was the element the Examiner focused his attention upon. But, nothing was done or said to exclude any other element of applicant's Claim 1 from consideration as part of an entire combination. Besides, any written remarks by counsel for applicant during prosecution of Claim 1 are not pertinent to file wrapper estoppel and are ignored in this Second Judicial Circuit. 1 Deller, Patent Claims (2nd Ed. 1971), p. 58; Wm. Hodges & Co. v. Sterwood Corp., 348 F. Supp. 383, 385 (n. 2)(E.D.N.Y. 1972); Reeves Bros.,

Inc. v. U.S. Laminating Corp., 282 F. Supp. 118, 133 (E.D.N.Y. 1968); affd., 417 F.2d 869 (2 Cir. 1969); Faraday, Inc. v. Audio Devices, Inc., 165 USPQ 634, 637 (S.D.N.Y. 1970).

Possibly because the Court erroneously concluded that it could not view Claim 1 as a whole, i.e. as a combination claim, and possibly because the Court misapplied the doctrine of file wrapper estoppel and needlessly limited the scope of Claim 1, the Court below therefore reduced the subject matter of Claim 1 that it would consider "to include only the pusher element" (614a), and the Opinion below merely explores the prior art relating to pushers. This falls far short of satisfying the requirements of Graham, supra, that the whole invention be considered, and that the scope and content of the prior art as to the whole invention be examined. As will be shown hereinafter, the pusher element, standing alone is only a small part of the combination recited in Claim 1.

The Opinion below fails to consider all of the constituent parts of Claim 1. As a result, it does not satisfy the Graham requirement of determining the differences between the claimed invention and the prior art.

Further, it is submitted that insufficient inquiry was made by the Court below to ascertain the level of ordinary skill in the art of box making machinery. The conclusion that the level of skill is "quite high" appears to be founded solely on the basis of educational attainment and length of work in

the field. However, it is submitted that the proper inquiry in this area should also have been directed toward actual achievements in the field, as exemplified by prior art. See Erie Technological Prod. Inc. v. DieCraft Metal Prod., Inc., 461 F.2d 5, 8-9 (7 Cir. 1972); In re Palmer, 451 F.2d 1100, 1103 (CCPA, 1971), Mueller Brass Co. v. Reading Ind., 352 F. Supp. 1357, 1367-68 (E.D. Pa. 1972). This is done at a later point in this Brief.

The precise basis of the invalidity holding below is speculative in that the Opinion language fails to compare Claim 1 to the prior art but merely includes the broad statements that:

> "the extensive disclosures found in all the prior art references in evidence support a finding that the patented device is not a patentable combination of elements" (614a)

and

> "on the basis of the disclosures in the prior art and the evidence showing that the expedients used in defendant's pusher mechanism were commonly used in other fields the Court finds that its invention was anticipated by the prior art and that it would have been obvious to a person having ordinary skill in the art of designing and constructing machinery for handling box blanks" (615a) (Emphasis Added).

2. Claim 1 is Valid

Had the Court below proceeded in accordance with the requirements of Graham, supra, because of the following, Claim 1 would have been found to be valid.

(a) Level of Those Skilled in the Art

Spiess Patent No. 2,637,351 (PX-2, Tab 16) is the only prior art that shows a device for straightening and delivering boxes issuing from a folder-gluer. Because of this, the Spiess patent is an accurate reflection of the highest level of skill possessed by those in the art of box-making machinery prior to the making of the Shields invention in suit. At the time Shields made the invention of the patent in suit (PX-1, E1), an underfed stacker-straightener for glued boxes was not the type of machine that could have been developed routinely by those skilled in the art of box-making and handling equipment (406-7a). Somebody unusual was required to invent the patented underfeed-stacker straightener, which is now in high demand because of its greater control over boxes and its versatility (407-8a). These advantages, as well as the apparent advantages of manpower saving, space saving and ease of material handling in the box plant, attest to the great desirability of underfed stacker-straighteners and point to non-obviousness of Shields' invention.

(b) Extent of the Prior Art and Differences Between the Patented Device of Claim 1 and the Prior Art

As art prior to the making of the Shields invention set forth in Claim 1 of the suit patent PX-1 (E1), KOPPERS relies on the twenty-three patents of PX-2 (61a), sixteen of which were cited by the Patent Office. At trial, KOPPERS' expert Fischer gave testimony concerning ten of these prior art patents.

Notwithstanding the fact that the Spiess Patent 2,637,351 (PX-2, Tab 16), discussed at pages 6 through 8 of this Brief, is the only prior art showing or suggesting apparatus for handling boxes issuing from a folder-gluer while their glue joints are still tacky, and therefore subject to opening during handling, the only purpose for which KOPPERS appears to have relied upon the Spiess right-angle top fed shingling conveyor machine is its showing of a slapper to square misaligned box panels.

* * * * * * * *

The Hart Patent 1,344,034 (PX-2, Tab 4) shows an underfed stacker in a machine for producing heels, and the Hess Patent 2,591,259 (PX-2, Tab 13) shows an underfed stack for disk-like billets. Neither Hart nor Hess teaches that a folded box having a tacky glue joint may be fed to the bottom of an underfed stack where misaligned box panels are squared as the boxes rise in the stack. The devices of both Hart and Hess are so constructed that in-feeding must cease during takeoff (537-42a) whereas the patented device, as defined by Claim 1 of the suit patent (PX-1, E1), is constructed so that in-feeding of boxes to the stack is not interfered with by the mechanism that removes piles of boxes from the top of the stack.

Both the Greenwood and Ward et al. Patents 1,868,308 and 2,578,838 (PX-2, Tabs 8 and 19) show understackers, but neither shows nor suggests that an understacker may be used to accumulate boxes having tacky or unset glue joints. Both of these patents fail to show means for squaring of box panels and fail to show means for removing piles of predetermined height or number from

the top of the stack in a manner that does not interfere with continued infeeding to the stack (542-3a, 547a).

The Evans et al. Patent 1,865,308 (PX-2, Tab 7) teaches no more than the use of a slapper to align individual metal sheets, in a stack, with respect to each other. Evans et al. does not teach the straightening or alignment of misaligned folded box panels (547-50a).

The Sheppard, Jamieson et al., Crank and Kottmann Patents Nos. 2,135,773, 2,410,380, 2,607,283, and 2,631,716, respectively (PX-2, Tabs 9, 11, 14 and 15) were cited by KOPPERS merely to show particular pusher constructions. However, none of these four patents teaches or suggests pushing a pile of boxes from the top of an underfed stack without interfering with in-feeding to the stack (550-8a).

Since the pusher devices of all three accused machines are actuated by power cylinders, apparently the Chandler and Gjostein Patents 2,672,079 and 2,626,147, respectively, (PX-2, Tabs 17 and 23) were relied upon by KOPPERS merely for their teachings of power cylinder operated pusher devices.

(c) <u>The Combination of Claim 1 is Non-Obvious</u>

It is submitted that the combination of elements as set forth in Claim 1 passes the "non-obviousness" test of Section 103, first because the overall concept of the Shields invention is completely different from the concepts taught by the prior art as exemplified by DX-B (E127) and the Spiess patent (PX-2, Tab 16) (see pages 6-8, supra) and because the prior art does not

teach the use of an underfed stack of glued boxes to serve as a machine element that applies pressure to maintain the integrity of the glue joints of boxes in the stack and to prevent those box panels which are being slapped into alignment, from springing back to prior misaligned positions between slaps of the oscillating plate forming the rear boundary for the stacker (498-9a).

It has long been made clear by the Courts of this Circuit and other Circuits that the test of invention or non-obviousness under 35 U.S.C., Sec. 103 is not a subjective one to be made by hindsight or by hypothesis of what might have been done by others, but is rather an objective test based on a number of criteria considered by leaking judicial authorities to provide reliable guideposts in making the required evaluation in retrospect.

Judge Learned Hand, writing for the Circuit Court of Appeals in Lyon v. Bausch & Lomb Optical Co., 224 F.2d 530 (2 Cir. 1955); cert. den., 350 U.S. 911 (1955), emphasized the necessity of applying an objective standard and indicated that although the solution to a problem might seem simple and obvious in retrospect, where skilled workers in the field, although lacking no necessary material, had not put the advance into operation, it was not obvious. This is especially true in the art of box making machinery which, if as noted by the Court below (614a) and by KOPPERS' attorney, "is a highly skilled art" (474a).

American Technical Machine Co. v. Caporatta, 339 F.2d 557 (2 Cir. 1964) cites with approval not only the Bausch & Lomb

case, supra, but also Reiner v. Leon Co., 285 F.2d 501 (2 Cir. 1960), wherein Judge Hand, again writing for this Court, stated (p. 503):

> "...It is idle to say that combinations of old elements cannot be inventions; substantially every invention is for such a 'combination': that is to say, it consists of former elements in a new assemblage. All the constituents may be old, if their new concourse would not 'have been obvious at the time the invention was made to a person having ordinary skill in the art' (Sec. 103, Title 35)."

As stated another way in Phillips Electronic Corp. v. Thermal Industries, Inc., 450 F.2d 1164, 1173 (3 Cir. 1971):

> "...[Although] all of the individual elements of the. . .[patented combination] were contained in the prior art. . .this fact, in itself, did not invalidate the. . . patent unless the combination of these elements would have been obvious to the ordinary skilled worker in the art. See United States v. Adams, 383 U.S. 39, 148 USPQ 479 (1966)."

This same view was also adopted by this Court in Shaw v. E.B. & A.C. Whiting Co., 163 USPQ 580, 586 (2 Cir. 1969); cert. den., 165 USPQ 417 (1969).

In the present case, there is abundant evidence providing strong support for a finding that the combination of elements recited in Claim 1 was not obvious and not lacking in patentable substance when weighed against earlier work in the art, such as the Spiess patent (PX-2, Tab 16), and weighed against the fact that individual mechanical elements to carry out the invention were known to the prior art.

(c) Additional Factors Showing Non-Obviousness

i. Commercial Success

KOPPERS' infringing imitations admit and attest to the usefulness of the patented invention separate and apart from industry acceptance. S&S has sold more than three hundred underfed delivery devices (455a), and approximately 90% of these embody the invention defined by Claim 1 (450-5a). The S&S delivery device is used together with a folder-gluer and related devices, with the total package now selling for about "$225 to $240,000". and the stacker straightening end represents "about 20 percent" of this total (455a). In addition, in the period from the Spring of 1969 when KOPPERS sold its first underfeed stacker-straightener (DX-P, p. 56) until February 19, 1971, KOPPERS sold 30 underfeed stacker-straighteners (531-2a). This is an outstanding commercial acceptance of the underfeed stacker-straightener concept in that there are only approximately 750 folder-gluers in the United States (474a).

Graham, supra, 383 U.S. at pp. 17-18 notes that commercial success is to be considered in connection with obviousness. The Court of Customs and Patent Appeals, the only Court in the United States which is confronted by issues of patentability on an almost daily basis, follows the Graham doctrine that commercial success of an invention is a factor to be considered in connection with determining obviousness under 35 U.S.C., Sec. 103. The Opinion in In re Fielder, 471 F.2d 640 (CCPA 1973) struck down a

Government defense "that unless patentability is in doubt, evidence of commercial success and the like is immaterial", and declared, 471 F.2d,at p. 644:

> "...we have made clear our position that such evidence must always be considered in connection with the determination of obviousness. In re Palmer, supra; In re McLaughlin, 443 F.2d 1392, 1395, 58 CCPA 1310, 1314 (1971)." "...If it was previously the law that commercial success is 'of no moment unless patentability is in doubt,' In re Sejournet, 285 F.2d 823, 826, 48 CCPA 799, 804 (1961), such a proposition no longer has vitality."

KOPPERS apparently denies that the significant commercial success of S&S in underfeed stacker-straighteners arose from sales of the patented product. KOPPERS denies that those of the S&S underfeed stacker-straighteners that have lift spirals or screws fall within Claim 1 despite the fact that these same machines also have every other element of Claim 1 in the same combination as set forth in Claim 1. However, the S&S machines are constructed to function without the lift screws in place, and when running certain types of boxes, such as a die cut box DX-0, the lift screws must be removed (483a).

The law is clear that the addition of any element to a combination recited in a patent claim does not relieve the combination from being within the claim. See Union Carbide Corp. v. Filtrol Corp., 170 USPQ 482, 521 (C.D. Cal. 1971) where the Court declared:

> "An infringer does not escape liability by merely adding features or impairing or improving on the patentee's invention. Temco Electric Motor Co. v. Apco Co., 275 U.S. 319, 328 (1928);

Neff Instrument Corp. v. Cohu Electronics, Inc., cited supra; Hansen v. Colliver, 282 F.2d 66, 69, 127 USPQ 32, 34-35 (9th Cir. 1960)."

Hence, the commercial success of the S&S stacker-straightener is attributable to the patented combination, which on occasion uses supplemental elements.

KOPPERS also apparently denies that the S&S commercial success is attributable to the patented product on the ground that one element of the S&S underfeed stacker-straighteners does not satisfy the claim limitation directed to it. KOPPERS denied that the S&S pusher, constructed of spaced sections, meets the claim limitation of a pusher plate. However, the only evidence of record shows that in the S&S pusher the spaced sections act as a unitary structure basically the same as or the equivalent of the pusher plate illustrated in the suit patent PX-1 (E1) (479-80a, E126). Neither the size of the pusher nor its precise configuration is specified in Claim 1 as a limitation to the Shields invention. Claim 1 merely requires the pusher to be mounted for limited vertical movement relative to the means that supports the pusher generally vertically during the pushoff. It is clear that the S&S pusher constructed of spaced sections is so mounted and falls within the scope of the claim language.

In summary, defendant's remarkable commercial success is attributable to the patented invention.

ii. Reliance on Extensive Prior Art and Extensive Examination by Patent Examiner

Exhibit PX-2 is a book of twenty-three patents relied

on by KOPPERS, only seven of which were not cited by the Patent Examiner.

All those claim elements alleged by KOPPERS to be found in the additional art cited by them, are in reality also found in the art cited by the Patent Examiner. In Upjohn Co. v. Italian Drugs Importing Co., 190 F. Supp. 361 (S.D.N.Y. 1961), the Court in holding a patent for surgical sponge made of gelatin foam valid and infringed, said 190 F. Supp. at pp. 363-64:

> "* * * [The] fact that defendants are forced to rely on so many prior art patents and publications in support of their contention [the] * * * invention lacks novelty is in itself significant evidence of the weakness of their defense * * *. Moreover, the fact that this and similar prior art was before the Patent Office during the prosecution of the patent reinforces the presumption [of] validity * * *."

Further buttressing the validity of the suit patent (PX-1, E1) is Judge Lumbard's comment in Georgia-Pacific Corp. v. United States Plywood Corp., 258 F.2d 124, 133 (2 Cir. 1958); cert. den., 358 U.S. 884 (1958):

> "The presumption of validity is entitled to particular weight, when, as here, the file wrapper history discloses a careful consideration in the Patent Office before issue. * * *"

The four reviews and analyses of Claim 1 and of the art by the Examiner, which resulted in the four rejections of Claim 1 (PX-19, pp. 20, 29, 41, 51) before its eventual allowance, Georgia-Pacific Corp. v. United States Plywood Corp., supra, at pp. 132-133; Metal Film Co. v. Metlon Corp., 316 F. Supp. 96, 101 (S.D.N.Y. 1970),

and the large number of patents cited by the Patent Examiner, Laitram Corp. v. Deepsouth Packing Co., 443 F.2d 928, 934 (5 Cir. 1971); Canaan Products Inc. v. Edward Don & Co., 273 F. Supp. 492, 498 (N.D. Ill. 1966); affd., 388 F.2d 540 (7 Cir. 1968), are ample proof of the close scrutiny given to Claim 1 by the Patent Office.

(d) KOPPERS Bears the Burden of Proving Patent Invalidity

Recognition by the Courts of the special expertise of U.S. Patent Examiners because of their experience in dealing constantly with the relevant art has resulted over the years in the development of the doctrine of the presumption of validity. This doctrine was given Congressional sanction in 35 U.S.C., Sec. 282 which provides:

> "A patent shall be presumed valid. The burden of establishing invalidity of a patent shall rest on a party asserting it."

Particular cognizance of this statute was taken by Judge Lumbard in Georgia-Pacific Corp. v. United States Plywood Corp., 258 F.2d 124, 132-33 (2 Cir. 1958), cert. den., 358 U.S. 884 (1958):

> "There are other factors, however, which we must consider. One is that plaintiff is attacking a patent duly issued by the Patent Office. From this flows a presumption of validity, a presumption which is perhaps too often minimized in the courts. Indeed, since the passage of the 1952 Act, 35 U.S.C.A. 1 et seq., we have had occasion to comment on the fact that restrictive judicial views of inventiveness developed in cases where duly issued patents were declared invalid departed from the more liberal standards pertaining at a prior time and forced a Congressional reinvigoration of the standards. Lyon v. Bausch & Lomb Optical Co. (2 Cir., 224 F.2d 530 (1955), cert. den., 350 U.S. 911, 76 S.Ct. 193,

> 100 L. Ed. 799. Expertness and experience in passing upon patents lie primarily in the Patent Office and these important factors are only partially offset by the greater concentration and the additional relevant evidence which can be brought to bear in any particular patent litigation in the courts."

KOPPERS, here challenging the validity of the patent, has the burden of proving the S&S patent (PX-1, E1) invalid; Mumm v. Jacob E. Decker & Sons, 301 U.S. 168 (1937); Boas Box Co. v. Proper Folding Box Corp., 330 F. Supp. 401, 404 (E.D.N.Y. 1971), and can satisfy this burden, not by a mere preponderance of evidence, but only by clear and convincing evidence, Boas Box Co. v. Proper Folding Box Corp., supra; Magnus Harmonica Corp. v. Lapin Products, Inc., 114 F. Supp. 942, 946 (S.D.N.Y. 1953).

The burden of overturning the presumption of validity rests heavily on the infringers. The evidentiary requirement was defined by Justice Cardozo in Radio Corp. v. Radio Laboratories, 293 U.S. 1, 8 (1934):

> "Again it is said that 'the presumption of the validity of the patent is such that the defense of invention by another must be established by the clearest proof -- perhaps beyond reasonable doubt.' * * * 'Through all the verbal variances, however, there runs this common core of thought and truth, that one otherwise an infringer who assails the validity of a patent fair upon its face bears a heavy burden of persuasion, and fails unless his evidence has more than a dubious preponderance.'"

In Mumm v. Decker & Sons, 301 U.S. 168 (1936), the Supreme Court characterized an infringer's burden as follows (p. 171):

"* * *Hence, the burden of proving want of novelty is upon him who avers it. Walker on Patents, Sec. 116. Not only is the burden to make good this defense upon the party setting it up, but his burden is a heavy one, as it has been held that 'every reasonable doubt should be resolved against him'."

From the evidence adduced at trial, it is submitted that KOPPERS' burden of proving invalidity has not been sustained.

B. Patent Infringement

1. Errors By the Court Below in Relation to Patent Infringement

With respect to the question of KOPPERS' infringement, the Court below should have initially compared the accused devices illustrated in PX-3, 5, and 12 (E136, E138 and E11) and the Shields invention as defined by the language of Claim 1. Graver Tank & Mfg. Co. v. Linde Air Prod. Co., 339 U.S. 605, 607 (1950). See Mastantuono v. Ronconi, 278 F.Supp. 144, 148 (S.D.N.Y. 1967). Had this been done, the Court would have found that all elements recited in Claim 1 are also found in each of the accused devices in the same cooperative relationship set forth in Claim 1. (See DX-T, Charts 5, 6 and 7, E138-40)

However, the Court below incorrectly compared defendant S&S's device illustrated in the drawings of the suit patent with KOPPERS' accused devices of PX-3, 5 and 12 (E136, E138 and E11) and relied upon the differences between them (616a-617a). The Court should have compared the accused devices and the device defined by Claim 1 of the suit patent. This was reversible error. American Tech. Mach. Corp. v. Caparotta, 339 F.2d 557, 559-60 (2 Cir. 1967).

The Opinion below also generalizes by declaring that:

> "the issue of infringement should be resolved on the basis of mechanical means employed by the devices being compared." (617a)

However, the Opinion fails to compare the accused devices to the device of Claim 1.

Since literal infringement is present, if the Court below was in doubt about actual infringement, possibly this doubt could have been resolved by a study of the prosecution history and, where indicated, resort could have been had to the Doctrine of File Wrapper Estoppel. On the other hand, if the Court was in doubt concerning literal correspondence between elements of Claim 1 and elements of the accused device, consideration should have been given to the Doctrine of Equivalents.

The holding of invalidity is based on generalized statements such as:

> "A patentee should never be allowed to recapture that which he surrendered by amendment." (617a)

However, the Opinion fails to point out any features "surrendered by amendment" or any features that the patentee sought "to recapture". The discussion of the file wrapper PX-19 (E18) at pages 17-22 of this Brief shows that all amendments made to Claim 1 were to cure formal matters and none were made to avoid prior art, so that application of File Wrapper Estoppel is inappropriate. Further, the file wrapper PX-19 (E18), insofar as it relates to Claim 1, does not contain any admissions limiting the scope of mechanically equivalent elements essentially to the forms illustrated in the drawings and disclosure of the suit patent PX-1. American Tech. Mach. Corp. v. Caparotta, supra, at 339 F.2d 559-60; see Graver Mfg. Co. v. Linde Air Prod. Co., 339 U.S. 605, 607 (1950).

On the issue of equivalents as defined, inter alia, in Graver Mfg. Co. v. Linde Air Prod. Co., supra, U.S. at 607, and infra herein, pp. 40, 47, the Opinion below states that:

> "Reference to the structural design of the two machines and the manner in which they perform their tasks discloses that there are significant differences between the two machines. In light of the file wrapper history and the state of the prior art at the time the patent was issued the Court would be hard put to hold that the different means employed by the Universal machine were equivalent to those employed in Claim One of the suit patent." (617a).

However, the Opinion fails to specify any differences between Claim 1 and the accused devices (because there are none), fails to specify the prior art being relied upon (because there is none), and fails to specify the portion of the file wrapper history being relied upon.

2. The Infringement

a. Claim 1 Is Infringed By Each Accused Device

Charts 5, 6 and 7 of DX-T (E138-40) illustrate graphically that each of the different versions of Plaintiffs' understacker shown in the respective Exhibits PX-3, 5 and 12 (E136, E 138 and E11) falls within the scope of the Shields patent in suit (PX-1, E1). Showings made by these graphic illustrations are bolstered by related testimony appearing on the record at 524-27a as to the sliding plate version of PX-3 (E136), at 513-22a as to the lift cylinder version of PX-5 (E138), and at 527-29a as to the mechanical lift version of PX-12 (E11).

It is well established that the claims of a patent define the invention, Continental Paper Bag v. Eastern Paper Bag, 210 U.S. 405, 418 (1908), and if it is shown that any one of KOPPERS' accused devices contains each of the elements recited by Claim 1, then this claim, if valid, is infringed. This fundamental doctrine was defined by the Supreme Court in Graver Tank & Mfg. Co. v. Linde Air Prod. Co., 339 U.S. 605, 607 (1950), as follows:

> "In determining whether an accused device or composition infringes a valid patent, resort must be had in the first instance to the words of the Claim. If accused matter falls clearly within the claim, infringement is made out and that is the end of it."

See Mastantuono v Ronconi, 278 F.Supp. 144, 148 (S.D.N.Y. 1967); Safe-Flight Instr. Corp. v McDonnell-Douglas Corp., 169 USPQ 328, 335 (C.D. Cal. 1971).

In the present case there is abundant evidence showing that each element of Claim 1 (E4) is found in all three of Plaintiffs' accused understacker-straighteners of PX-3, 5 and 12 (E136, E138 and E11).

b. KOPPERS' Inadequate Contention of Non-Infringement

The argument advanced by KOPPERS against findings of infringement are numerous, but each is based on nothing more substantial than a play on words.

Thus, KOPPERS seeks to limit the scope of the word "synchronism" in Claim 1 as applied to the coordination of the

input "conveyor" and the folder-gluer "machine" to a direct mechanical tie between the "conveyor" and "machine". This is not justified by engineering usage of "synchronism" in the context of the Shields invention (503-4a). At least because of the automatic speed follower that ties the speed of plaintiffs' understacker to the speed of the folder (DX-P, p. 53), there is no doubt that there is "synchronism".

KOPPERS claims that its slapper or squaring plate is pivoted and because of this it does not reciprocate. However, the Spiess patent (PX-2, Tab 16) shows slapper 150 mounted to pivot 151 and is described as a "reciprocating" member PX-2, Tab 16, col. 5, l. 48). William Pulda, KOPPERS' (Universal's) former chief engineer and the designer of the first two accused machines (PX-3 and 5, E136 and E138), admitted that the slapper moves back and forth (149-50a) and hits the back ends of the boxes after they enter the stack (151a). Theodore Ley, the president of Plaintiff Universal (DX-P, p. 3), and a graduate engineer (DX-P, p. 67, E118), testified that slappers B of the S&S deposition Exhibits 2 and 9, corresponding to PX-3 and 5 (E136 and E138), respectively, are "reciprocating" plates (DX-P, pp. 11 and 43). Hence, infringement of the literal wording of the claim is admitted.

The Doctrine of the File Wrapper Estoppel does not rule out bringing KOPPERS' pivoted slapper plates within the term "reciprocally movable" since the amendment changing "oscillatorily" to "reciprocally was not made to distinguish over prior

art. This change was made only to provide a word which the Examiner felt was more easily understood (PX-19, p. 51, E68). The change from "oscillatorily" to "reciprocally" was not substantive but was merely a permissible change of phraseology. In Hubbell v. United States, 179 U.S. 77, 80 (1900), the Court stated:

> "It is quite true that, where the differences between the claim as made and as allowed consist of mere changes of expression, having substantially the same meaning, such changes made to meet the views of the examiners ought not to be permitted to defeat a meritorious claimant. While not allowed to revive a rejected claim, by a broad construction of the claim allowed, yet the patentee is entitled to a fair construction of the terms of his claim as actually granted."

Cf. Eimco Corp. v. Peterson Filters & Eng. Co., 406 F.2d 431, 438 (10 Cir. 1968).

KOPPERS claims that, since its pusher plate moves intermittently rather than being in motion continuously, it does not meet the limitation of a pusher plate "for periodically pushing a top portion of the stack from" the accumulating device.

The modifier "periodically" refers to the function of "pushing" and does not limit the motion of the pusher plate. There is no dispute that in the device of the suit patent (PX-1, E1) and in all three accused devices (PX-3, 5 and 12, E136, E138 and E11) the pusher is not continuously pushing a pile of boxes from the top of the stack. The pusher plates in all four devices remove piles of boxes by engaging the top of the stack "periodically".

KOPPERS also claims that the foregoing limitation is restricted to a construction in which the pusher plate sweeps across the top of the entire stack. But Claim 1 is not limited to a pusher plate that functions to apply the total action serving to remove a pile of boxes from the top of the stack.

In addition, KOPPERS contends that the doctrine of file wrapper estoppel excludes an intermittently operated pusher from the scope of Claim 1 because of remarks made by an S&S attorney during prosecution of the Shields patent application (E20). The remarks in question were not made in connection with Claim 1 in issue, but were made only in connection with application Claims 3 and 6 through 8 which recite that the pusher plate is "continuously movable" (PX-19, pp. 11, 14 and 15, E28, E31 and E32). Claims 3 and 6 through 8 are not part of this case. Claim 1 in issue merely recites that the pusher is "longitudinally" movable. Hence, the comments as to Claims 3 and 6 through 8 are irrelevant to the different limitation in Claim 1.

There does not appear to be any authority holding that arguments made in connection with a limitation in one claim may serve to restrict the interpretation of another claim that does not contain the limitation to which the argument in question pertained. Dart Ind., Inc. v. E. I duPont de Nemours and Co., 348 F.Supp. 1338, 1357 (Conclusion 22) (N.D. Ill. 1972); reversed on other grounds, 179 USPQ 392 (7 Cir. 1973).

Not only are the remarks unrelated to the claim language in issue, it is improper to consider these remarks with respect

to limiting Defendant's claim. In A. G. Spaulding & Bros. v John Wanamaker, 256 Fed. 530, 533 (2 Cir. 1919), Judge Learned Hand stated:

> "The successive rejections of this claim necessarily involved the rejection of the construction which the plaintiff seeks to put upon the patent at the present time... We take this occasion, however, once more to say that in the consideration of a file wrapper we do not look at the arguments of the applicant to the examiner. We wish it to be understood that, as we conceive the purpose for which the file wrapper can be examined, it covers simply the question of estoppels through rejected claims."

The means for supporting the pusher plate so that it is in a substantially vertical position when in contact with the top of the stack is explained in the discussion on prior page 13 of this Brief. That same discussion also explains the limited vertical movement of the pusher plate relative to the supporting "means" that maintains the pusher plate generally vertical during the push. KOPPERS seeks to limit the supporting "means" to a plate as illustrated in the patent drawings, but with respect to Claim 1 this is not warranted by the specification, the prosecution history or the prior art. It is submitted that the use of the term "support plate" in claims not under consideration is a clear indication that the support "means" of Claim 1 is a broader term than "plate".

Finally, KOPPERS contends that the accused devices do not meet the last limitation in Claim 1 to the effect that the stack is being fed during removal of the top pile by the pusher

plate. Koppers did not even attempt to demonstrate that the accused devices, or any of them, were constructed so as to prevent in-feeding during takeoff. In fact, in-feeding may take place during takeoff. This condition was observed by the witness Cantor at the Time Container plant in Monroe, Michigan (536a), and he took still photographs (DX-U, E133) (DX-UA, E134) and (UB) to indicate this condition at Hankins in Union, New Jersey. Reluctantly, KOPPERS' expert Fischer admitted that this condition could exist (309a). This condition is shown in the enlarged five frame sequence (DX-E1-E5) (E128-32) taken from film DX-D. Therefore, in KOPPERS' apparatus, the stack is being fed during removal of the top pile.

(c) Variations in Form Have Not Avoided Infringement

Even if certain structural elements of the accused machines are found not to be of the precise form as corresponding elements illustrated in the suit patent (PX-1, E1), infringement is not avoided. KOPPERS will urge that certain structural elements of its devices do not fall within the exact terminology of every limitation of the claim. With this, we disagree, as shown above. But even if it is found that certain limitations must be read carefully to find these exact counterparts in KOPPERS' devices, it should be kept in mind that KOPPERS, with the Shields patent (PX-1, E1) before it (DX-P, pp. 39-41) was struggling to devise an operative structure which performed exactly the same functions as the S&S in-line underfeed stacker-straightener, item for item, while nevertheless KOPPERS was striving for a difference in appearance. Section 112 of Title 35 U.S.C. simply requires that the inventor" set forth the best mode contemplated * * * of carrying out his invention" -- not all modes or variants thereof. This same section of the Patent Act broadly spells out the requirements for defining "the subject matter which the applicant regards as his invention" in the claims. Significantly here, the statute provides:

> "An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof."

In Graver Tank & Mfg. Co., Inc. v. Linde Air Products Co., 339 U.S. 605, 607 (1950), the Supreme Court stated:

> "But courts have also recognized that to permit imitation of a patented invention which does not copy every literal detail would be to convert the protection of the patent grant into a hollow and useless thing. Such a limitation would leave room for -- indeed encourage -- the unscrupulous copyist to make unimportant and insubstantial changes and substitutions in the patent which, though adding nothing, would be enough to make the copied matter outside the claim, and hence outside the reach of law."

Continuing on the effect of the infringer's minor variation of the inventive theme, the Court stated (p. 607):

> "One who seeks to pirate an invention like one who seeks to pirate a copyrighted book or play may be expected to introduce minor variations to conceal and shelter the piracy. Outright and forthright duplication is a dull and very rare type of infringement. To prohibit no other would place the inventor at the mercy of verbalism and would be subordinating substance to form. It would deprive him of the benefit of his invention and would foster concealment rather than disclosure of inventions, which is one of the primary purposes of the patent system".

Commenting on the evolution and application of the doctrine of equivalents characterized as one of "wholesome realism", the Supreme Court quoted Judge Learned Hand in Royal Typewriter Co. v. Remington Rand, Inc., 168 F.2d 691, 692 (2 Cir. 1948), and stated (p. 608):

> "The essence of the doctrine is that one may not practice a fraud on a patent. Originating almost a century ago in the case of Winans v. Denmead, 15 How. 330, it has been consistently applied by this Court and the lower federal courts, and continues today ready and available for utilization when the proper circumstances for its appli-

> cation arise. 'To temper unsparing logic and prevent an infringer from stealing the benefit of an invention' a patentee may proceed against the producer of a device 'if it performs substantially the same function in substantially the same way to obtain the same result.' Sanitary Refrigerator Co. v. Winters, 280 U.S. 30, 42." (Emphasis indicates quote.)

As to why the doctrine of equivalents should be applied in patent cases, the opinion in Fujitsu v. Sprague Elec. Co., 153 USPQ 168, 172 (S.D.N.Y. 1967) is instructive. In Graver v. Linde, supra, 339 U.S. at p. 608-09, the Court noted the basic tenet of the doctrine of equivalents:

> "The theory on which it is founded is that: 'if two devices do the same work in substantially the same way, and accomplish the same result, they are the same, even though they differ in name, form or shape.' Machine Co. v. Murphy, 97 U.S. 120, 125."

Reese v. Elkhart Welding & Boiler Works, Inc., 447 F.2d 517, 523 (7 Cir. 1971); Black v. Sivalls & Bryson, Inc., 171 USPQ 19 (10 Cir. 1971).

In Georgia-Pacific Corp. v. United States Plywood Corp., 258 F.2d 124 (2 Cir. 1958); cert. den., 358 U.S. 884 (1958), the Court, in considering a claim which did not read directly on the accused article, held, at 258 F.2d pp. 136-37:

> "It has often been stated that the scope of the patent is limited by the language of the claims. Where, however, an infringer has attempted to appropriate the essence of the invention while remaining outside the language of the claims, courts have not hesitated to apply the doctrine of equivalents, whereby the 'essence' of the invention is protected."

In the case at bar the facts are far more favorable for a finding of infringement in that the claim reads directly on KOPPERS' underfeed stacker-straighteners.

In Waring Products Corp. v. Landers, Frary & Clark, 263 F.2d 160 (2 Cir. 1959), even though the claim did not literally read on the accused device, the Court found infringement in its holding:

> "We think that the shape of the Mixablend receptacle was a mechanical equivalent of that literally disclosed in claim 3 and that the claim, reasonably construed, covers the Mixablend device."

The Doctrine Of Equivalents may be invoked as to either or both minor and major features of a single invention. Since a subsidiary feature of an invention can be radically changed with less effect on the invention as a whole than a relatively minor change in the main feature of the invention, the less important the minor feature is relatively to the main feature, the wider the range of equivalents applied to the minor feature. The test of infringement is concerned with the extent to which the real invention has been appropriated.

In Traylor Eng. & Mfg. Co. v. Worthington Pump & M. Co., 1 F.2d 833, 837 (3 Cir. 1924), Judge Woolley stated:

> "If the eccentric hub and gear mechanism were the whole invention, or the center of it, it might be so construed as to relieve the eccentric hub and gear mechanism of the Michigan machine from infringement. But as this arrangement is only incidental to what elsewhere is the central conception of the invention, we are of opinion that the mechanism of the Michigan machine in this regard falls within the domain of equivalence."

Except for the detailed construction of the pusher support and operating means, the accused devices have virtually the same appearance as the patented device illustrated in the drawing of the suit patent (PX-1, E1) and fall within the limitations of Claim 1. But the particular form of the pusher support and the pusher operating means are only incidental to the invention of Claim 1 wherein means are provided to square misaligned folded panels of boxes fed into the bottom of an underfed stack while the stack is rising, and removing piles of boxes from the top of the stack without interfering with infeeding to the stack. Thus, the claim language relating to the pusher mounting and operating means is entitled to the broad construction inherent in the language of the claim as are other secondary details recited in Claim 1.

The language of Claim 1, as viewed in the light of the prior art, is entitled to reasonable scope to read directly on each of KOPPERS' accused devices and should, if necessary, be accorded a range of equivalents sufficiently broad to readily support a finding of infringement within the provisions of 35 U.S.C. Sec. 112 with respect to each of the three successive devices made by KOPPERS.

The Shields invention was a significant departure from the prior art and the prior concepts, and has made an enormous contribution to the art. Because of this, Claim 1 should be afforded a broad scope and the language thereof is entitled to a wide range of equivalents. Plastic Contact Lens Co. v. Frontier of Northeast, Inc., 324 F. Supp. 213, 215 (W.D.N.Y. 1969); affd., 441 F.2d 67 (2 Cir. 1971); cert. den., 171 USPQ 325 (1971).

In Diamond International Corp. v. Walterhoefer, 289 F. Supp. 550, 579 (D. Md. 1968), the court declared:

> "...Although this combination patent is in a closely crowded art, and is not a pioneering breakthrough, it is of substantial importtance in the field of egg cartons, especially molded pulp egg cartons, constituting 'a valuable contribution to the art,' entitling the patent 'to liberal treatment.' " (Emphasis Added)

V. CONCLUSION

The Judgment Order being appealed should be vacated in that the Opinion below does not contain findings of fact sufficient to determine the basis for the conclusions, and because the Court below did not proceed properly and misapplied legal doctrines to arrive at conclusions that are clearly contrary to the weight of evidence.

The invention of the Shields patent has been shown to have been "non-obvious" at the time it was made. It represents a significant improvement over the prior art and a radical departure therefrom, thereby entitling the language of Claim 1 to be given the fair range which claims should be given under the law.

KOPPERS' accused devices embody the essence of the Shields invention and meet every limitation of Claim 1. KOPPERS should not be permitted to escape liability because of mere changes in mechanical forms that are, nevertheless, the same as the structures defined by Claim 1.

The contribution to the art made by the Shields invention should be recognized by this Court by finding Claim 1 to be

valid and infringed by each of KOPPERS' three accused underfeed stacker-straighteners.

Respectfully submitted,

June 25, 1974.

Jerome M. Berliner
Robert C. Faber
OSTROLENK, FABER, GERB & SOFFEN
Attorneys for Appellant
260 Madison Avenue
New York, New York 10016
(212) 685-8470

A 202 Affidavit of Personal Service of Papers H LUTZ APPELLATE PRINTERS, INC.

U.S. COURT OF APPEALS:SECOND CIRCUIT

Index No.

KF KOPPERS CO., et al,
Plaintiffs-Appellees,

against

S&S CORRUGATED PAPER MACHINERY CO.,
Defendant-Appellant.

Affidavit of Personal Service

STATE OF NEW YORK, COUNTY OF NEW YORK ss.:

I, Victor Ortega, being duly sworn,

deposes and says that deponent is not a party to the action, is over 18 years of age and resides at

1027 Avenue St. John, Bronx, New York

That on the 25th day of June 1974 at 230 Park Avenue, New York

deponent served the annexed Appellant's Brief upon

Wyatt, Gerber & Shoup-Attorneys for Appellees

the in this action by delivering a true copy thereof to said individual personally. Deponent knew the person so served to be the person mentioned and described in said papers as the Attorney(s) herein,

Victor Ortega

Print name beneath signature

Sworn to before me, this 25th day of June 19 74

VICTOR ORTEGA

ROBERT T. BRIN
NOTARY PUBLIC, STATE OF NEW YORK
NO. 31 - 0418950
QUALIFIED IN NEW YORK COUNTY
COMMISSION EXPIRES MARCH 30, 1975

Robert T. Brin